

## MEMO

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**C:** Case Study Cities

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**From:** Terri O'Connor/Bill Hurrell

**Subject:** Parking Profile and Policy Recommendations -Vallejo

## Introduction

This memorandum presents the tailored parking demand model results and associated recommendations for the Metropolitan Transportation Commission's (MTC) *Reforming Parking Policies to Support Smart Growth Study* for the City of Vallejo. This memorandum includes a parking profile of the study areas based on parking demand, tailored parking rates developed by the parking demand model as well as an overview of final policy recommendations.

## Methodology

To estimate the parking demand generation of existing and future developments in the Vallejo Downtown and Waterfront districts, WSA developed a parking model that combines pipeline land use predictions with calibrated demand rates for each use type. Pipeline project information provided by the City of Vallejo yielded the set of land use types to be examined within the model. Next, peak parking generation rates derived from a variety of sources, including the Institute of Transportation Engineers (ITE) publication *Parking Generation*, the Urban Land Institute (ULI) publication *Shared Parking*, the City of Vallejo Municipal Code, and previous Wilbur Smith Associates parking studies were assigned to each land use. These peak rates represent each use's theoretical demand at its heaviest use time and in the event that every patron drives alone.

These peak rates were subsequently reduced by a series of 'mode split factors' to account for trips made by residents and visitors who walk, bike or use public transit to reach their destination. These factors were derived by comparing Vallejo's transit accessibility, land use mix, and demographics to other Bay Area case studies, as well as by analyzing recent census data for the area.

Additional rate reduction factors were included for each land use based on time-of-day demand shifts (the model calibrates for the weekday midday demand peak) and captive market trips. Captive market trips are those for which the proximity of uses facilitates walking between activities rather than using a vehicle, thereby reducing the demand for parking. In densely developed horizontal mixed-use zones like the

Vallejo downtown, the compatibility of office, retail, and restaurant uses results in a further reduction of the peak rate. To prevent double counting of parking demand between uses amenable to captive trips, this concept was incorporated into a 'shared parking' factor which further reduces the peak rate.

While the parking demand factors were initially based on standard industry sources, the examination of observed on-site parking conditions by WSA resulted in closely calibrated parking rates unique to Vallejo. The total number of observed cars parked on-street and off-street at the peak time gives the total demand for the study area land uses at that time. However, the goals of the Vallejo case study were to determine the parking demand of a more heavily utilized mixed use district. As such, WSA increased the overall demand observed by eliminating observed vacancies with the express intent of comparing Vallejo to more economically vibrant downtowns. This assumes that the existing parking utilization is only a fraction of what the downtown can expect to experience under stronger economic conditions.

## Parking Profile

A parking profile was developed for the Vallejo Downtown and Vallejo Waterfronts based on the current parking demand, expected economic growth, future pipeline projects and parking rates estimated by the parking demand model.

## Parking Rates

The existing utilization analysis coupled with current land use data provided the basis for developing parking generation rates. These were used to identify shared parking opportunities and complimenting land uses.

### *Peak Parking Factor*

WSA developed parking rates based on the overall district parking demand peak, as well as by individual land use type peaks. To accurately describe expected peak parking demand, the WSA model calibrates land use demand rates according to their prominence at weekday mid-day. Several land use types typically exhibit peaks at different time periods of the day and week. There is significant potential for shared parking between adjacent land uses with opposing peak demands; such uses include retail, theater, auto sales, hotel/motel, church, post office, convention/meeting space and auto service.

### *Shared Parking Factors and Internal Trip Capture*

The mixed use nature of the districts also provides ample opportunity for internal trip capture (i.e. park once and walk to several destinations). This is highly likely to occur at the peak demand period of lunch time during the work week when local employees already parked walk to lunch and shopping destinations. Internal trip capture or trip chaining is also common in the evening as employees run errands on their way home from work and on weekends as visitors combine shopping and restaurant trips. The primary use for the work week was considered to be office related. As such, higher shared parking reduction factors were assigned to secondary uses such as services, retail and restaurant. Additional shared parking factors were assigned to uses such as churches and meeting spaces as the peak use is typically focused to a particular time of the week thus providing a strong opportunity for shared parking at all other times.

### *Alternative Parking Rates*

Parking rates in Table 1 indicate the demand based rates at the mid-day mid-week peak, as well as the individual peak rates for each land use category at its heaviest use time. Both sets of rates include mode split reduction factors and the shared parking factors inherent in internal trip capture for the districts. Due to limited utilization data available for the waterfront district, its rates are assumed to mirror the that of the downtown districts.

The rates the City of Vallejo adopts for major land uses in the downtown and waterfront districts should range between the demand rates calibrated for the overall district peak and those calibrated for individual land use peaks. All rates exhibit a marked reduction from the current parking code, as indicated in the table. For current uses that have distinct peaks but have demonstrated difficulty sharing parking, the higher value in the range should be considered. The range of rates should be provided in the parking code, but the final approval of the rate should be at the discretion of the planning department.

**Table 1 Demand Based and Peak Based Parking Rates (parking/unit)**

Land Use	Unit	Reduction Factors							District Peak Rates			Land Use Peak Rates			Parking Code
		Base Rate	Peak	Walk	Bike	Transit	AutoOwn	SharedPrk	ST	LT	Total	ST	LT	Total	
Single Family Residential	DU	2	1	0	0	0	0	0	0.20	1.80	2.00	0.2	1.8	2	2.2
Multi-Family	DU	1.5	1	0	0	0	0	0	0.15	1.35	1.50	0.15	1.35	1.5	1.7
Storage	KSF	0.5	0.8	0.03	0.02	0.05	0	0	0.04	0.32	0.36	0.045	0.405	0.45	0.8
Retail	KSF	5	0.9	0.03	0.02	0.05	0	0.3	2.43	0.27	2.70	2.7	0.3	3	4
Auto Sales	KSF	4	0.2	0.03	0.02	0.05	0	0	0.65	0.07	0.72	3.24	0.36	3.6	4
Restaurant/Bar	KSF	11	0.9	0.03	0.02	0.05	0	0.6	2.67	0.30	2.97	2.97	0.33	3.3	20
Office-General	KSF	3	0.8	0.03	0.02	0.05	0	0	0.65	1.51	2.16	0.81	1.89	2.7	3.5
Office-Gov	KSF	3	0.9	0.03	0.02	0.05	0	0	0.49	1.94	2.43	0.54	2.16	2.7	3.5
Churches	KSF	9	0.1	0.03	0.02	0.05	0	0.5	0.18	0.18	0.36	1.8	1.8	3.6	12.5
Libraries	KSF	2.3	0.5	0.03	0.02	0.05	0	0.1	0.83	0.09	0.92	1.656	0.184	1.84	20
Theater/Auditorium	KSF	5	0.1	0.03	0.02	0.05	0	0	0.36	0.09	0.45	3.6	0.9	4.5	12.5
Athletic Clubs	KSF	4	0.5	0.03	0.02	0.05	0	0.3	0.96	0.24	1.20	1.92	0.48	2.4	12.5
Museums	KSF	4	0.5	0.03	0.02	0.05	0	0.36	0.86	0.22	1.08	1.728	0.432	2.16	20
Post Office	KSF	3	0.9	0.03	0.02	0.05	0	0.63	0.18	0.55	0.73	0.2025	0.6075	0.81	2.86
Convention/Meeting Space	KSF	9	0.1	0.03	0.02	0.05	0	0.5	0.18	0.18	0.36	1.8	1.8	3.6	Disc.
Senior Housing	KSF	1	1	0	0	0	0	0	0.10	0.90	1.00	0.1	0.9	1	0.5
Service	KSF	4	0.9	0.03	0.02	0.05	0	0.72	0.58	0.06	0.65	0.648	0.072	0.72	3.3
Auto Service	KSF	3	0.75	0.03	0.02	0.05	0	0	1.01	1.01	2.03	1.35	1.35	2.7	2.86
Hotel	Room	1.3	0.3	0	0	0	0.05	0	0.04	0.33	0.37	0.1235	1.1115	1.235	1

Sources: Wilbur Smith Associates, April 2007. Vallejo Municipal Code (16.62)

Notes: Disc indicates discretion of City planning department

## Parking Demand

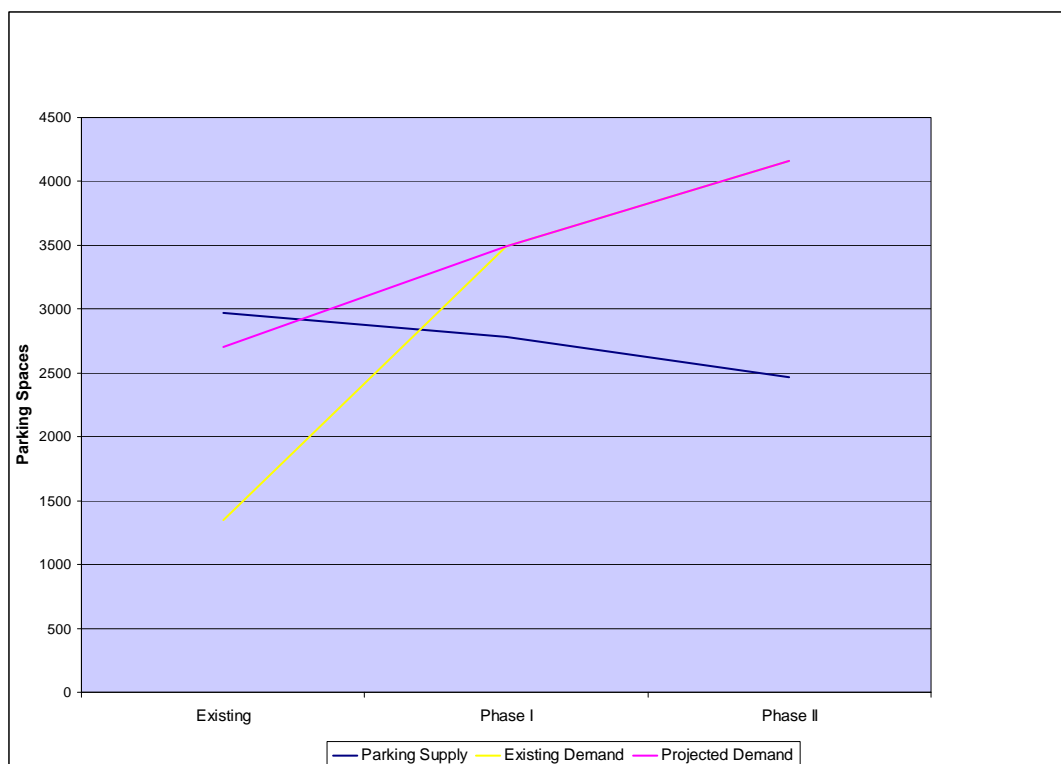
### *Impact of infill development – Phasing of Catalyst Sites*

Under the terms of the partnership between the city and Seattle developer Triad Communities, 12 square blocks adjacent to the town's historic waterfront will be redeveloped. Seven buildings, containing 100,000 square feet of office and retail space on the ground floors with about 1,000 residential units including studio lofts, live-work townhouses, one- and two-bedroom flats and penthouses above -- will be built. Streets that have been cut off from the waterfront by previous development will be reconnected. Anchored by the restoration of the Empress Theater, an arts and entertainment district and office/employment and retail districts are planned.

This development is occurring largely on sites currently depended upon for long term employee parking for the City of Vallejo, with occupancies exceeding operating capacity (92 percent) during the morning hours and approaching normal operating capacity (81 percent) during the midday hours. This indicates that replacement of these parking spaces will become more urgent as development proceeds and will need to be phased in alongside Triad's Catalyst Site Development timeline.

Based on the timeline, the demand for parking will reach parking supply capacity during Phase I of development. Based on a strong downtown economy the model projects much higher parking demand than is currently being observed. As such, the existing parking demand curve will grow to meet the projected parking demand based on the future Catalyst projects. This does not include demand induced by the Waterfront pipeline projects. The parking demand projection for downtown Catalyst projects is indicated in Figure 1.

**Figure 1 Downtown Parking Demand**



Parking demand projected for downtown is presented in Table 2.

<b>Table 2 Downtown Parking Demand</b>						
Land Use	Existing Demand			Future Demand		
	Total	ST	LT	Total	ST	LT
Athletic Clubs	7	6	1	7	6	1
Auto Sales	13	12	1	13	12	1
Auto Service	82	41	41	82	41	41
Churches	22	11	11	22	11	11
Convention/ Meeting Space	18	9	9	20	10	10
Libraries	59	53	6	59	53	6
Multi-Family	702	70	632	1959	196	1764
Museums	44	35	9	44	35	9
Office-General	477	143	334	477	143	334
Office-Gov	341	68	273	341	68	273
Post Office	2	1	2	2	1	2
Restaurant/Bar	174	156	17	203	183	20
Retail	390	351	39	566	509	57
Senior Housing	212	21	191	212	21	191
Service	41	37	4	41	37	4
Single Family Residential	104	10	94	104	10	94
Storage	11	1	10	11	1	10
<b>TOTAL</b>	<b>2700</b>			<b>4165</b>		

Source: Wilbur Smith Associates, April 2007.

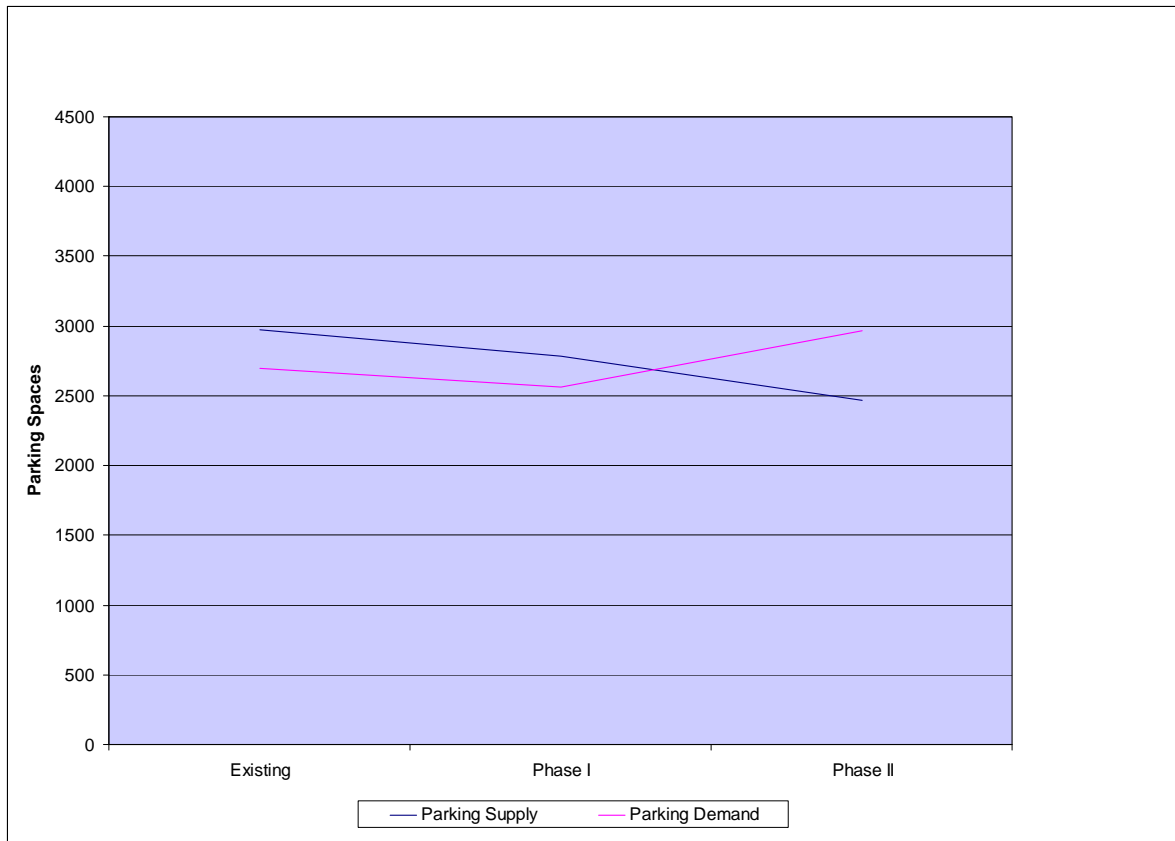
Parking demand projected for future waterfront developments is presented in Table 3.

<b>Table 3 Future Waterfront Parking Demand</b>			
Land Use	Total	ST	LT
Convention/Meeting Space	14	7	7
Hotel	74	7	67
Multi-Family	1673	167	1505
Office-General	918	275	643
Retail	370	333	37
<b>TOTAL</b>	<b>3048.9</b>		

## Pricing

The parking model pricing module indicates that parking demand can be reduced by 25% or more if introduced during pipeline development, as shown in Figure 2. If used as part of a complete parking management program, pricing could help control the timing of the eventual/potential need for building a parking structure.

**Figure 2 Pricing Effect of Infill Development**



WSA assumed the introduction of pricing during the Phase I development and a price increase during Phase II of development. The price initiation reduced the anticipated demand increase by 32 percent as well as reducing existing demand by 25 percent. This had the benefit of delaying the parking supply deficit until after Phase II of development. A price increase in Phase II reduced anticipated demand from 690 to 404 spaces. The assumptions for the pricing module are summarized in Table 4.

Table 4: Pricing Module Assumptions			
		Short Term Parkers	Long Term Parkers
Phase I	Inconvenience	7%	1%
	Elasticity (low/med/high)	30% high	30% high
	% Increase	100%	100%
Phase II	Inconvenience	7%	1%
	Elasticity (low/med/high)	15% medium	30% high
	% Increase	150%	150%

It is assumed the inconvenience of paying for parking weighs the greatest on short-term parkers and will immediately discourage a small percent due to lack of proper currency or need to stay longer than maximum time limits. Initially elasticity will be expected to be higher in an area with no pricing

experience and demand reduction will be observed almost immediately. Long term parkers will overall be the most sensitive to pricing in the on-street spaces and their elasticity should be maintained as the pricing and demand stabilizes.

## **Policy Recommendations**

The City of Vallejo has established several smart growth enabling policies and programs in its Specific Plan; as a result, there are several smart growth strategies where the City has already laid important groundwork. There are, however, several more implementable strategies available to the City to help reach its goals. Innovative smart growth programs and policies that have been executed in communities throughout the Bay Area and North America should be considered. The stakeholders interviewed from the City of Vallejo were generally supportive of “smart growth” policies, including parking management, shared parking, parking cash out, and in-lieu fees, but were concerned that parking not be shared with residential uses.

### *Parking Management*

First, the City should develop a comprehensive parking management plan. This should include elements of demand and supply management. While Vallejo’s parking supply is currently far in excess of observed demand, this will change as Catalyst development sites are filled in, parking supply is removed and the economic condition of the downtown improves.

A parking management plan seeks to control demand and parking availability, allocating appropriate amounts of parking to different users (e.g. residents, visitors, and ferry patrons). This includes the following elements:

- On-street short term parking for downtown visitors
- Off-street employee parking, ferry parking
- Parking pricing as demand merits

### *Parking Pricing*

The parking model indicated that there will be a parking shortage before the completion of Phase I of Catalyst development. Figure 2 indicates that a two-tiered on-street pricing program will help control parking demand and delay or obviate the need for a parking structure. Once on street pricing is introduced, it is important that a price differential is maintained such that off-street parking is cheaper or free. Differentials will increase on-street short term parking supply by shifting long term users to off-street facilities. When parking spaces are priced correctly, price-sensitive long term users gravitate to lower priced off-street facilities, freeing up the smaller, more valuable supply of on-street spaces for users that are willing to pay a higher price for an available space, typically for a shorter duration.

### *Decrease Parking Requirements*

The City of Vallejo requires parking minimums for development without regard for the unique nature of the downtown commercial area (as indicated in Table 1 above). Parking spaces are currently required by the municipal code for the Vallejo downtown for every 50 to 350 square feet of commercial floor space. While some consideration is given for shared parking in the current code, the City should consider a zoning overlay for the downtown that reduces or eliminates off-street parking requirements.



The parking model indicates that rates can be reduced significantly when taking into account alternate mode share and potential shared parking due to complementary land use mixes and internal trip capture. Lower parking requirements will reduce the overall cost of development downtown and encourage the highest and best use of the land. In addition, the City could restructure its shared parking policy, making sharing a requirement rather than an option in the overlay district through in-lieu fees for those projects desiring parking spaces.

### *Parking Improvement Districts*

Parking Improvement Districts are based on the concept of a business improvement district, where the funds collected from parking operations go to the enhancement of parking conditions in a defined district. A steering committee made up of members of the business community and the transportation commission can be set up to control the collection and direction/dispersal of the funding. Municipalities often put the funding toward a parking structure, but a steering committee can choose to direct the funding toward other desired or needed improvements within the district. Current examples include Old Pasadena and Redwood City.

### *In-lieu fees*

In-lieu fees assessed by the City (fees assessed to a development in-lieu of providing required off-street parking) can be handled in a similar manner to a parking improvement district, where the fees collected are put toward improvements in the district as decided by the steering committee. This policy should be considered, as the steering committee should have the flexibility to determine the district's most pressing parking and improvement needs. Fees can be based on the average cost of land in the downtown or fixed by space and adjusted annually. Often cities charge a fee much less than the cost to provide parking to help encourage infill development and control the location of downtown parking. However, if the parking requirements are too high, the total in-lieu fee can still be prohibitive to development, so parking requirements should also be reduced as recommended above.

### *Unbundling Parking*

Vallejo should consider a policy of unbundling parking from residential and office developments within walking distance from a transit hub (i.e. the ferry terminal or bus transfer station). MTC 2000 BATS data indicate high rates of transit, walking and bike trips<sup>1</sup>, coupled with lower average auto ownership, vehicle trips and VMT for residents living within a half-mile of a transit station or ferry terminal.<sup>2</sup> If parking is unbundled, overall rents can be reduced, the parking supply can be more readily shared between adjacent uses and overall supply can be lessened due to the principles of shared parking.

### *Shared Parking*

The parking model assumes a level of shared parking between land uses with different peak demands (see Table 1) such as office and housing versus restaurant, retail, entertainment, as well as uses that promote

<sup>1</sup> "When broken down by mode, per capita transit trip rates for ½-mile residents are between two and a half and eleven times higher than other residents. Bicycle trip rates for ½-mile residents are almost twice the regional average and are between two and five times higher than residents living more than 1 mile from a rail or ferry stop. The same trend holds for walk trip rates." *Characteristics of Rail and Ferry Station Area Residents in the San Francisco Bay Area: Evidence from the 2000 Bay Area Travel Survey* Characteristics of Rail and Ferry Station Area Residents in the San Francisco Bay Area: Evidence from the 2000 Bay Area Travel Survey. Volume I. MTC Sept 2006. pp 42.

<sup>2</sup> "Households within ½-mile of a station produce between 47% and 60% fewer vehicle miles than their suburban and rural counterparts, which means that emissions per capita is much lower for the ½-mile group." MTC Sept, 2006. pp43.

internal trip capture such as office, retail and restaurant uses. In addition to reducing or eliminating parking minimums for the downtown as recommended by the model rates, the city could restructure its shared parking policy by making an overlay district requirement that projects desiring to build parking provide in-lieu fees for shared parking developments. Parking structures should be examined in context for each development as to need based on the actual parking demand characteristics of the area, taking into consideration current and future levels of auto ownership and transit use as well as financial feasibility. The parking model may be updated and analyzed with parcel level data to help fine tune this analysis.

#### *Transportation Demand Management (TDM)*

Since a large portion of downtown Vallejo's future development will be housing and office space, it is essential to provide these residents and employees with strong incentives to use alternative transportation to and from work. TDM is an essential element to reducing parking demand. Developers can be required to participate in a transportation demand management program and provide incentives for current employers and residents to participate. A TDM program, some elements of which are discussed as parking reduction schemes in the municipal code can include programs and policies to reduce single occupancy vehicle mode share, such as:

- Providing free or discounted transit passes for new residents and employees
- Parking cash out for employers that provide free parking
- Subsidizing carpool programs and providing reserved carpool spaces
- Requiring secure bicycle parking for every new development
- Employer provided amenities (e.g. showers, valet service)

#### *Access, Connectivity and Wayfinding*

Vallejo's downtown is in close proximity to the ferry terminal and new bus transit center. The City should explore policies and programs to enhance pedestrian and bike connectivity between the downtown and these transit centers. Federal funding for these enhancements through MTC's Transportation for Livable Communities (TLC) grant program is one example of many of the funding sources available for these types of programs. Enhancements include but are not limited to:

- Bike lanes and bicycle parking amenities
- Pedestrian amenities such as wider sidewalks, pedestrian scaled lighting, seating, street trees, and enhanced crosswalks
- Connections to local and regional bike paths/trails
- Wayfinding program made up of clear, easy to read, consistent signage including the locations of landmarks and key destinations